

BRIEFER ARTICLES.

THE WILD FLOWERS OF CUSHING'S ISLAND, MAINE.

THE popular summer resort known as Cushing's island is a small island in Casco bay, a few miles from the city of Portland. Its greatest length is a mile and a quarter, and its shore line about five miles. In shape it is roughly triangular; the base of the triangle, or the back of the island, is towards the open ocean, while the front looks towards the mainland and Portland city.

A rocky ridge runs through the island close to its seaward side, projecting as "The Point" at one extremity, and forming White Head cliffs at the other. This ridge, covered with a stiff growth of spruce and fir trees, forms a very efficient protection to the rest of the island from the storms and cold winds from the ocean. The large hotel known as the Ottawa House is situated on one of the highest parts of this ridge, and looks over the landward half of the island, which is low and rather level, with grassy meadows and sandy shores.

On account of this conformation of the ground, there is an unusual diversity of natural conditions. Hence, in spite of the small size of the island, there is an astonishing variety of wild flowers to be found; so that the writer was able to gather in the course of a short summer's vacation more than three hundred distinct species, and there are doubtless many others which escaped his attention.

The first place to which a visitor to the hotel would naturally turn his attention is the woods which lie immediately behind it. As intimated before, these woods are formed almost entirely of spruce and fir trees, and this fact alone will enable any botanist to picture them in his mind. Such woods are always cool and shady, even on the hottest summer day, with dark foliage overhead and the pleasant odor of balsam in the air. Little underbrush is formed owing to the dense shade of the thick branches, but the ground is covered with a soft carpet of moss and fir needles. Everywhere are to be seen the delicate graceful fronds of the wood-ferns, the dark leaves of the wintergreen

(*Gaultheria procumbens*), or the bunch-berry (*Cornus Canadensis*) with its red berries. There are other forms more difficult to find, but which will amply repay a search for them. Few of our native flowers can be compared with the twin-flower (*Linnæa borealis*), whose slender creeping vines and tiny pink bells sometimes completely cover the ground and scent the woods for yards around. In certain nooks may be found clusters of lady's slippers (*Cypripedium acaule*), one of the most beautiful of our orchids, or the white waxy flowers of the shin-leaf (*Pyrola rotundifolia*), or the delicate enchanter's nightshade (*Circea alpina*).

In certain parts of the woods there are low places, where the ground becomes swampy. Here the undergrowth becomes more profuse. The magnificent flowering ferns or osmundas, growing to a height of four or five feet, often form dense brakes. The curious Jack-in-the-pulpit (*Arisæma triphyllum*) abounds, and rarer forms such as the rein-orchis (*Habenaria bracteata*) and the ragged fringed orchis (*Habenaria lacera*) are found; while in the soft moist swamp-moss are growing more delicate plants, such as the sweet white violet (*Viola blanda*), the small bed-straw (*Galium trifidum*), and many others.

Some years ago a fire occurred on the island, and burned off a large tract of woodland along the White Head road, between the hotel and the Ross cottage. Light and sunshine having been let in on the ground plants of all kinds seem to have invaded the place and to be struggling for its possession. A new growth of poplar and white birch is springing up and promises to take the place of the former dark conifers. At present, however, another group of plants is in the ascendancy, for this clearing is the home of the berries for which Cushing's island is famous. Every summer numerous parties of berry pickers visit the island and return laden with fruit, but their depredations seem to have little effect in exhausting the supply. Raspberries and blue berries are the most abundant, but there is no lack of blackberries, gooseberries, and huckleberries. The plants also are very varied, each week during the summer showing a new assortment. Bushes of elder (*Sambucus Canadensis*) and viburnum (*Viburnum cassinoides*), covered with white blossoms, are perhaps the most showy. The great willow-herb (*Epilobium angustifolium*) is common, as is usual on all burnt ground. Other plants that are particularly noticeable are golden ragwort (*Senecio aureus*), sarsaparilla (*Aralia hispida*), hawkweed (*Hieracium scabrum*), cow-wheat (*Melampyrum Americanum*), and ladies' tresses (*Spiranthes gracilis*).

Leaving the wooded ridge that shelters the island from the ocean,

we come next to the landward side. This part of the island is more level and is occupied by meadows, with the cultivated fields belonging to the farm in the center of the island. It is here that the greatest abundance of summer flowers is to be found. In the spring violets and wild strawberries abound ; later on, the meadows are a blaze of yellow and white from the buttercups and daisies which fairly cover the ground ; still later, when the hay has been gathered in, and the fields have been left bare by the mowing machine, every stony place, hedge or thicket is adorned with masses of goldenrods and purple asters. Besides these plants, which are in such abundance as to form prominent features in the landscape, there are scores of old friends to be found by every roadside, along the fences, and among the hay. Here are clovers, everlasting, wild rose, sweetbriar, silkweed, thistles, mustard, evening primrose, and a host of others too numerous to be enumerated here. One point of interest might be mentioned in connection with these meadow plants. A botanist looking at the list of the species that occur would probably be struck by the fact that very few of them are native American plants. Cushing's island has been inhabited for two hundred and fifty years, and during this time many plants have been introduced, either intentionally or accidentally, through their seed being mixed with that planted on the farm. Other seeds have probably blown or floated across from the mainland. These foreigners have flourished and driven out of the fertile places most of the native plants ; so that if one wishes to study true American plants, he must go to the woods, rocks, marshes, and out-of-the-way places. As an illustration of this it may be remarked that no less than fifty-eight different kinds of English, European, and tropical plants are to be found growing in the fields on Cushing's island.

Although the woods and meadows furnish the greater part of the wild flowers of the island, a visiting botanist would probably be more interested in the plants of a less promising locality, namely, those found on the rocky shores and sandy beaches. While the flowers already mentioned may be seen anywhere in the northern states, those of the shores are peculiar and only to be found along the Atlantic seaboard. They grow in the most unlikely localities, flourishing in the clefts of the rocks and in the dry sand down to and even below the high-tide mark. Few of them have showy blossoms, though the flowers of the beach pea (*Lathyrus maritimus*) and the Scotch lovage (*Ligusticum Scoticum*) are exceptions to this rule. More curious and charac-

teristic forms are the spiny saltwort (*Salsola Kali*), or the cactus-like samphire (*Salicornia herbacea*). Most of them have fleshy succulent stems and leaves, enabling them to store up the scanty moisture for a time of drought. This is well seen in the case of the sea blite (*Suaeda linearis*), the sea rocket (*Cakile Americana*), and the seaside plantain (*Plantago maritima*). Other interesting plants found in these sections are the seaside crowfoot (*Ranunculus Cymbalaria*), goldenrod (*Solidago sempervirens*), sea lavender (*Statice Limonium*, var. *Caroliniana*), spurge (*Euphorbia polygonifolia*), rush saltgrass (*Spartina juncea*), and sea sand-reed (*Ammophila arundinacea*).

Besides the localities already mentioned, there are several natural features of Cushing's island which are especially interesting from a botanical standpoint. At the front of the island are two small marshes, separated from the sea only by narrow sandy beaches. These marshes are partly covered with dense thickets of hazel and alder, but the open parts furnish many interesting forms. As is usual in marshy places, reeds and sedges abound, with bulrushes, bur reeds, and irises. Certain parts of the marshes are carpeted with the delicate trailing vines of the cranberry (*Vaccinium macrocarpon*). Another plant of great interest found here is the sundew or flycatcher (*Drosera rotundifolia*), whose small leaves may be seen with all their glistening bristles spread out, ready to entrap any unwary insect.

Another characteristic feature of the island is the part called Bay-berry ridge. This is a low ridge or rather a rise in the ground, which presents a rather peculiar appearance owing to islands of bushes which are scattered over it. These little islands are formed mainly of bay-berry, sweet fern, and juniper bushes, but mingled with them are other flowering shrubs, such as blackberry bushes, wild roses, and spiraea.

The island terminates towards the north in a precipitous cliff known as White Head. Here the rocks rise perpendicularly from the sea to a height of over a hundred feet. Even on the face of this frowning rock, exposed to all the winds and storms, with nothing but tiny crevices for their support, are seen some of the most delicate plants. Prominent among these is the wild columbine (*Aquilegia Canadensis*), whose red and yellow blossoms are a familiar sight in such localities. An equally pretty but less showy flower is the crane's-bill (*Geranium Robertianum*). The lion's foot (*Prenanthes Serpentaria*) and some slender ferns and grasses complete this little group of hardy cliff-dwellers.

Lastly, no account of the flora of the island would be complete without some mention being made of the famous willow grove, a group of fifty or sixty magnificent trees growing in a slight hollow above the bathing beach. These trees are probably a hundred and fifty years old, many of them have trunks eighteen or twenty feet in circumference, and none of them show any signs of decay. Taken as a whole, it is probably the finest willow grove in the New England states.

This too brief and imperfect account may serve to give some idea of the flora of Cushing's island. A botanist could wish for no better place in which to study the flora of the northern New England coast.
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NOTES ON THE BOTANY OF THE SOUTHEASTERN STATES. II.

DIERVILLA RIVULARIS Gattinger, Bot. Gaz. 13: 191. 1888.—Fruiting specimens of this interesting Diervilla were collected August 24 and again October 5, 1897, on the rocky bluffs of Lookout mountain, Tennessee. Dr. Gattinger originally found the species in a similar location at Lula falls, on the Georgia side of Lookout mountain, and some six miles from the station of the material at hand.

CRATÆGUS COLLINA Chapm. Flora S. U. S. ed. 2. second suppl. 684. 1892.—A species very distinct, but confounded with *C. punctata* Jacq. *C. collina*, as it grows at Biltmore, N. C., is a small tree 4–5^m in height, and with a trunk diameter of 1^{dm} under favorable conditions, with gray spreading branches that are freely armed with rather stout chestnut-brown to gray spines. The flowers, which appear before any others of the genus, are about 2^{cm} in diameter, white and of a disagreeable odor: calyx divisions lanceolate, glandular, the tube pubescent: shoots, foliage, and corymbs appressed pubescent, becoming glabrous with age: fruit globose, about 1^{cm} in diameter, dull red: leaves obovate to nearly oval, 3–7^{cm} long, including the petiole, 2–5^{cm} wide, or a trifle larger on vigorous shoots, acute, finely but obtusely serrate and incisely lobed, the base narrowed into a short petiole. The range, though imperfectly known, is evidently from northern Georgia, Tennessee, and North Carolina to West Virginia and Missouri. From *C. punctata* the species may be separated by the fewer